

# CLASS I APPLICATION TECHNICAL REVIEW

FOR:

**Nevada Cement Company**  
Fernley, Nevada

Operating Permit to Construct #AP3241-2201  
FIN # A0030

**Application Log Number 07AP0044**



BY

STATE OF NEVADA  
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR QUALITY

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**December 18, 2007**

## 1.0 INTRODUCTION

The permittee (Nevada Cement Company) has submitted a Class I Air Quality Operating Permit to Construct (OPTC) permit application requesting Minor Revision to their existing operations currently permitted under their Class I Air Quality Operating Permit #AP3241-0387.01 on July 25, 2006 to the Nevada Division of Environmental Protection, Bureau of Air Pollution Control (NDEP-BAPC). The permittee (NCC) is a wholly owned subsidiary of Eagle Materials Inc. (EMI).

The facility is located in western Nevada, approximately 3.5 miles northwest of Fernley, Nevada. The facility operations are located approximately at UTM 306.000 km East by 4388.000 km North, Zone 11 (Sections 11, Township 20 North, Range 24 East in Hydrographic Area 76 – Fernley Area). The Standard Industrial Classification (SIC) number for the facility is 3241 (Cement, Hydraulic).

The existing Class I (Title V) permit is for operating of Portland cement manufacturing plants and associated coal/coke and finish mill feed storage and handling operations. The permittee stated that the proposed modification is motivated by the need to produce enough cement to supply the demand in Nevada, while lowering the cost of the production of cement to enable NCC to remain competitive. In addition, and more importantly, installation of the five-stage preheater/precalciner kiln equipped with low NO<sub>x</sub> burners will decrease NO<sub>x</sub> emissions substantially (re: Attachment 1, Emission Calculation Spreadsheets).

Construction of the new plant and decommissioning of the two existing kilns will require the addition of new equipment and the modification of existing equipment. The existing facility consists of two long-dry process kilns that produce approximately 550,000 tons of cement annually. The permittee is proposing to replace the two existing long-dry process kilns with one single state-of-the-art dry process kiln. The kiln will be designed to produce in excess of 1 million tons of clinker annually, which will approximately double the capacity of the two existing kilns it is replacing.

The application materials related to Class I OPTC permit were originally received by NDEP-BAPC on July 25, 2006. The NDEP-BAPC case log number for this application is 07AP0044. During the process of reviewing permit applications, substantial amount of additional information were also received from NCC, EMI, and its Consultants (i.e., The RETEC Group, Inc.) through electronic and regular mails. The copies of all correspondences are kept in the permit file.

The existing NCC facility is considered a major source for Prevention of Significant Deterioration (PSD) purposes. This facility is located within Hydrographic Basin 76. The basin is currently designated as non-attainment for TSP (total suspended particulates) and unclassifiable/attainment for all other regulated air pollutants. The minor source baseline date for SO<sub>2</sub> was triggered on October 26, 1982. The proposed OPTC permit application will not result in any significant increases in permittee's existing permitted emission limits (refer to the Table 4.1.b. of this review). Also, the permittee's proposed OPTC permit application will not result in any increases in applicable pollutant Significant Emission Thresholds for PSD/NSR review purposes based on permittee's baseline actual emissions (for the period January 1, 2004 through December 31, 2005) vs. permittee's new proposed emissions (refer to the Table 4.1.c. of this review; and Attachment 1, Emission Calculation Spreadsheets).

After preliminary review of the submitted materials, the NDEP-BAPC has determined that the application is administratively complete (NAC 445B.3364.1.). The Notification of Initial Completeness letter was mailed to the permittee on September 11, 2006 and a copy including OPTC permit application to U.S.

Environmental Protection Agency (EPA), Region IX.

NDEP-BAPC has also included a condition in Section III.D. of the proposed permit that “Upon start-up of Systems identified in this Operating Permit (AP3241-2201), except for units specified in AP3241-2201, *the Permittee* is prohibited from simultaneously operating units identified in AP3241-2201 and in AP3241-0387.01.” to ensure that this OPTC application will not result in a major PSD change.

Additionally, NDEP-BAPC has added a condition in Section IV.E. to monitor and record PM<sub>10</sub> concentrations in the ambient air and monitor and record 30-meter meteorological conditions from the commencement of operation of the facility until the termination of the operation or, if applicable, until reclamation of the project is complete or the permittee has been relieved of its ambient monitoring requirement by the Chief of the Bureau of Air Pollution Control or his designee.

Pursuant to NAC 445B.3364.5., the NDEP-BAPC has established a 30-day public notice participation and comment period on proposed permit of the OPTC permit application. Issuance of a new Class I OPTC Permit (# AP3241-2201) will allow the permittee to construct a modified new cement facility and future operation of their processes by eventually replacing permittee’s existing Class I Air Quality Operating Permit #AP3241-0387.01.

## **2.0 DESCRIPTION OF PROCESS**

### **2.1 Overview**

The Portland cement produced by NCC is a cementitious, crystalline compound composed primarily of calcium, aluminum and iron silicates. Limestone containing calcium carbonate and aluminum, iron, and silicon oxides, clay and sand are combined and fired in a rotary kiln where the raw materials are calcinated and sintered through the pyroprocess to create cement clinker. The cement clinker is then refined by grinding and milling and stored for shipping.

### **2.2 Limestone Crushing and Screening**

Run-of-mine limestone is quarried and delivered to the NCC facility by truck where it is loaded into the dump hopper. The hopped limestone is then fed through an apron feeder to a primary crusher for initial size reduction. The crushed limestone is conveyed to a stacker conveyor that travels on rails enabling it to build longitudinal piles of limestone. The crushing circuits’ particulate emissions are controlled by one baghouse, a pneumatic spray dust suppression system, and covered conveyors. The particulate emissions captured by the baghouse are returned to the covered conveyors that move all of the raw material to the stacker conveyor.

### **2.3 New Raw Grinding Operations**

The raw materials stored are loaded by front end loaders into hopper style traveling bed conveyors equipped with weigh feeders for weighing and dispensing of the respective raw materials. The limestone stored in the longitudinal piles is reclaimed via a traveling reclaimer conveyor that conveys to the Limestone Mix hopper equipped with a weigh feeder for proper dispensing. The weighed materials are then transferred by conveyor to raw grinding for final milling. Particulate emissions from the raw grinding and the associated conveyance and elevating systems are controlled by baghouses.

## **2.4 Blend Silos**

The milled raw materials are mechanically transported to blending silos where the raw materials are further blended and discharged to the kiln feed bin. The particulate emissions from the conveying and elevating systems are controlled by three baghouses. The particulate emissions from the blend silos are controlled by one baghouse.

## **2.5 New Kiln and Kiln Feed Systems**

The blended raw materials discharged from the blending silos are conveyed mechanically to the kiln feed bin and its flow control and weighing system. The raw materials are fed via bucket elevators and air slides into the preheater and kiln system.

Particulate emissions from the feed systems are controlled by baghouses. Particulate emissions from the kiln are controlled by a large baghouse. This is the same baghouse that controls emissions from the Raw Grinding System. The exhaust gases that leave the preheater kiln system can go directly to the baghouse but normally they are routed through the Raw Grinding System to aid in drying the raw materials as they are ground. After leaving the Raw Grinding System the kiln exhaust gases go to the large baghouse.

Emissions of SO<sub>2</sub> generated from the kiln combustion of the coal/coke blend are controlled by the kiln, preheater, and Raw Grinding System itself. The SO<sub>2</sub> gases are exposed to the lime and limestone in the rotary kiln, as well as in the preheat tower, the raw grinder, and the baghouse, resulting in a natural dry scrubbing process.

## **2.6 New Clinker Cooler**

The resultant clinker produced by the firing of the raw materials, is discharged from the kiln to the clinker cooler where it is cooled. The cooled clinker is conveyed by an apron conveyor to the new clinker storage silo, or by drag conveyor and belt conveyor to the existing enclosed clinker storage building. The clinker cooler is controlled by a large baghouse and the conveyors are controlled by additional baghouses.

## **2.7 Finish Mills**

The clinker is transferred to a weigh feeder which feeds to the respective finish (ball) mill. The clinker is combined with about 5% gypsum, pulverized, and pneumatically conveyed to the cement storage silos for final bulk storage and shipping. Particulate emissions from the finish mills are controlled by individual baghouses for each mill.

The existing 14 MMBtu/hr heaters on Raw Mills 1 and 2 will be reduced to the three Finish Mills if additional heat is required to dry any of the feed products fed to the ball mills.

The Number 4 Finish Grind System is fed clinker, gypsum, and process additives via weigh feeders. The Number 4 Finish Grind System is comprised of a roller press for initial size reduction, a static and dynamic separator for product control and a ball mill for the fine grinding. Particulate emissions from the components of this system are controlled by several baghouses. The finished product is conveyed mechanically to the cement storage silos for bulk storage and shipping.

## **2.8 Cement Storage, Loadout, and Packhouse**

The cement storage consists of sixteen (16) cement silos which are used for loadout to truck or rail car. Emissions for the storage silos and the loadout processes are controlled by baghouses respectively.

The packhouse consists of packing or bagging of cement into bags for shipping. The packhouse emissions are controlled by a baghouse.

## **2.9 Coal/Coke Handling and Storage**

The coal/coke handling and storage systems consist of rail unloading and transport by covered conveyor to storage. The coal and coke is then transported to the coal feed bin and the coke feed bin. The coal or coke is then fed from the bins onto weigh feeders before being conveyed to the grinding mill. The grinding mill is an air swept mill so all ground fuel goes to the system dust collector. The collection system under the dust collector transports the coal or coke to the proper bin for storage as the coal and coke are ground at different times. The ground coal/coke conveying and storage system has several dust collectors to control particulate emissions. In addition, building enclosures, covered conveyor systems and moisture in the coal and coke also control emissions.

## **2.10 Finish Mill Feed Storage Tank and Handling for Finish Mills Number 1, 2, and 3**

The finish mill feed storage tank and handling consists of a 100 ton storage tank, totally enclosed screw conveyors and a bin vent dust collector. Material (process additives) are pneumatically conveyed either directly from trucks or from a large silo into the storage tank. The material is then metered into the totally enclosed conveyors and transported into the finish mill feed throats. The pulse jet dust collector on top of the storage tank controls emissions.

## **2.11 Finish Mill Number 4 Feed Storage Tank and Handling**

The new 10,000 ton clinker storage tank and handling system consists of weigh feeders, and apron conveyor, belt conveyor, and a bucket elevator to feed the Finish Grind system. Particulate emissions are controlled by several baghouses.

## **2.12 Other Miscellaneous Activities**

**Fugitive Dust:** Material handling operations; material storage piles; non-paved haul-roads; paved haul-roads; wind erosions of cement kiln dust areas; locomotives (rail cars); etc. within the facility generate fugitive dust emissions. Primary control measure to mitigate dust at the site is the best practical method (BPMs) which includes use of water trucks to spray water on disturbed areas on a regular basis and other appropriate measures (refer to permittee's "Surface Area Disturbance Permit - Fugitive Dust Control Plan", dated June 8, 2007).

## **2.13 INSIGNIFICANT ACTIVITIES**

- North Tank #1: installation date - 1970-1975; and capacity – 43,758 gallons. Based on capacity, this tank does not qualify as insignificant activities [NAC 445B.288.2.(d)]. Because of tank's extremely low VOC & HAP emissions of 67.19 lbs/yr, NDEP-BAPC has approved this tank as insignificant activities [NAC 445B.288.4.] on June 26, 2007. This tank is not subject to NSPS requirements.
- South Tank #2: installation date - 1970-1975; and capacity – 43,758 gallons. Based on capacity, this tank does not qualify as insignificant activities [NAC 445B.288.2.(d)]. Because of tank's extremely low VOC & HAP emissions of 67.19 lbs/yr, NDEP-BAPC has approved this tank as insignificant activities [NAC 445B.288.4.] on June 26, 2007. This tank is not subject to NSPS requirements.
- Raw Mill Tank #3: installation date - 1975; and capacity – 40,303 gallons. Based on capacity, this tank does not qualify as insignificant activities [NAC 445B.288.2.(d)]. Because of tank's extremely low VOC & HAP emissions of 66.08 lbs/yr, NDEP-BAPC has approved this tank as insignificant activities [NAC 445B.288.4.] on June 26, 2007. This tank is not subject to NSPS requirements.

- Quarry Diesel Tank: installation date - 1964; and capacity - 12,000 gallons. Based on capacity, this tank qualifies as insignificant activities [NAC 445B.288.2.(d)]. Based on installation date, this tank is not subject to NSPS requirements.
- Unleaded Fuel Tank: installation date - 1992; and capacity - 3,000 gallons. Based on capacity, this tank qualifies as insignificant activities [NAC 445B.288.2.(d)]. Based on capacity, this tank is not subject to NSPS requirements.
- Motor Oil Storage Tank: installation date - 1979; and capacity - 10,000 gallons. Based on capacity, this tank qualifies as insignificant activities [NAC 445B.288.2.(d)]. Based on capacity, this tank is not subject to NSPS requirements.
- Pony Motor for Kiln: NCC mentioned that this motor is a stationary internal combustion engine and rated less than 250 hp. This motor qualifies as insignificant activities [NAC 445B.288.2.(g)(1)]. Based on manufacturing date, this motor is not subject to NSPS requirements.
- Portable Generator: NCC mentioned that this motor is an emergency generator and the operating time is based on 500 hours per year. This generator qualifies as insignificant activities [NAC 445B.288.2.(h)]. Based on manufacturing date, this generator is not subject to NSPS requirements.
- Cooling Tower: NCC's estimated PM<sub>10</sub> emissions are 0.0153 lb/hr and 0.0670 ton/yr. Because of cooling tower's extremely low PM<sub>10</sub> emissions of 134.0 lbs/yr, NDEP-BAPC has approved this cooling tower as insignificant activities [NAC 445B.288.4.] on July 28, 2003. This cooling tower is not subject to NSPS requirements.

### **3.0 APPLICABLE REQUIREMENTS**

Applicable requirements are those regulatory requirements that apply to a stationary source or to emission units contained within the stationary source. In Nevada's program, the regulations governing the emissions of air pollutants from which the applicable requirements originate, are derived from four categories of regulations. These four categories consist of the requirements contained in the Nevada Revised Statutes (NRS), the Nevada Administrative Code (NAC), the Applicable State Implementation Plan (ASIP), and the Code of Federal Regulations (CFR, contained in various Parts within Title 40).

#### **3.1 GENERALLY APPLICABLE REQUIREMENTS**

Of the four categories of regulations governing emissions of air pollutants, there are many generally applicable requirements that apply to stationary sources and emission units located at a stationary source. A comprehensive summary of all the generally applicable permit requirements is contained in Sections I through IV of the proposed OPTC permit provided in Attachment 2.

#### **3.2 SPECIFIC APPLICABLE REQUIREMENTS**

The remainder of this section of the review will focus on specific applicable requirements associated with each emission unit or process at the NCC's facility. A list of the emission units, as identified in the application and a summary of the specific applicable requirements is contained in Table 3.2.a.

**TABLE 3.2.a. – List of Emission Units (EU) and Associated Specific Applicable Standards**

System(s) / Description(s)	Emission Unit(s)	Applicable Standards				
		NAC (445B)	SIP (Article)	NSPS (Part 60)	NESHAPS (Part 61, 63)	PSD (Part 52)
01 - Limestone Truck Dump	PF1.001	.22017	445.721	N/A	N/A	N/A
02 - Primary Crusher Circuit	S2.001 – S2.006	.22017	445.721	N/A	N/A	N/A
03(a) - Raw Material Storage	PF1.002	.22017	445.721	N/A	N/A	N/A
03(b) - Raw Material Storage	S2.007 – S2.011	.22017	445.721	N/A	Subpart LLL	N/A
03(c) - Raw Material Storage	PF1.003 – PF1.005	.22017	445.721	N/A	Subpart LLL	N/A
03(d) - Raw Material Storage	PF1.006 – PF1.007	.22017	445.721	N/A	Subpart LLL	N/A
03(e) - Raw Material Storage	PF1.008	.22017	445.721	N/A	N/A	N/A
	PF1.009 – PF1.010	.22017	445.721	N/A	Subpart LLL	N/A
03(f) - Raw Material Storage	PF1.011	.22017	445.721	N/A	N/A	N/A
	PF1.012 – PF1.013	.22017	445.721	N/A	Subpart LLL	N/A
03(g) - Raw Material Storage	PF1.014	.22017	445.721	N/A	N/A	N/A
	PF1.015 – PF1.016	.22017	445.721	N/A	Subpart LLL	N/A
03(h) - Raw Material Storage	PF1.017	.22017	445.721	N/A	N/A	N/A
	PF1.018 – PF1.019	.22017	445.721	N/A	Subpart LLL	N/A
03(i) - Raw Material Storage	PF1.020	.22017	445.721	N/A	N/A	N/A
	PF1.021 – PF1.022	.22017	445.721	N/A	Subpart LLL	N/A
03(j) - Raw Material Storage	PF1.023	.22017	445.721	N/A	N/A	N/A
	PF1.024 – PF1.025	.22017	445.721	N/A	Subpart LLL	N/A
04(a) - Raw Mill	S2.012	.22017	445.721	N/A	Subpart LLL	N/A
04(b) - Raw Mill	S2.013 – S2.017	.22017	445.721	N/A	Subpart LLL	N/A
04(c) - Raw Mill	S2.018 – S2.019	.22017	445.721	N/A	Subpart LLL	N/A
04(d) - Raw Mill	S2.020	.22017	445.721	N/A	Subpart LLL	N/A
05(a) – Blending Operations Storage Silos	S2.021 – S2.023	.22017	445.721	N/A	Subpart LLL	N/A
05(b) – Blending Operations Storage Silos	S2.024 – S2.027	.22017	445.721	N/A	Subpart LLL	N/A
06(a) – Kiln Feed System	S2.028 – S2.032	.22017	445.721	N/A	Subpart LLL	N/A
06(b) – Kiln Feed System	S2.033 – S2.035	.22017	445.721	N/A	Subpart LLL	N/A
06(c) – Kiln Feed System	S2.036 – S2.037	.22017	445.721	N/A	Subpart LLL	N/A
06(d) – Kiln Feed System	S2.038 – S2.039	.22017	445.721	N/A	Subpart LLL	N/A
07 – Kiln System	S2.040 – S2.043	.22017	445.721	N/A	Subpart LLL	N/A
08(a) – Clinker Cooler System	S2.044	.22017	445.721	N/A	Subpart LLL	N/A
08(b) – Clinker Handling System	S2.045 – S2.047	.22017	445.721	N/A	Subpart LLL	N/A
08(c) – Clinker Conveyors	S2.048 – S2.050	.22017	445.721	N/A	Subpart LLL	N/A
09 – #1 Finish Mill Systems	S2.051 – S2.058	.22017	445.721	N/A	Subpart LLL	N/A
10 – #2 Finish Mill Systems	S2.059 – S2.065	.22017	445.721	N/A	Subpart LLL	N/A
11 – #3 Finish Mill Systems	S2.066 – S2.071	.22017	445.721	N/A	Subpart LLL	N/A

**TABLE 3.2.a. – List of Emission Units (EU) and Associated Specific Applicable Standards (continued)**

System(s) / Description(s)	Emission Unit(s)	Applicable Standards				
		NAC (445B)	SIP (Article)	NSPS (Part 60)	NESHAPS (Part 61, 63)	PSD (Part 52)
12(a) – #4 Finish Grind Operations	S2.072	.22017	445.721	N/A	Subpart LLL	N/A
12(b) – #4 Finish Grind Operations	S2.073 – S2.074	.22017	445.721	N/A	Subpart LLL	N/A
12(c) – #4 Finish Grind Operations	S2.075 – S2.080	.22017	445.721	N/A	Subpart LLL	N/A
12(d) – #4 Finish Grind Operations	S2.081 – S2.085	.22017	445.721	N/A	Subpart LLL	N/A
12(e) – #4 Finish Grind Operations	S2.086	.22017	445.721	N/A	Subpart LLL	N/A
12(f) – #4 Finish Grind Operations	S2.087 – S2.091	.22017	445.721	N/A	Subpart LLL	N/A
12(g) – #4 Finish Grind Operations	S2.092 – S2.093	.22017	445.721	N/A	Subpart LLL	N/A
12(h) – #4 Finish Grind Operations	S2.094 – S2.098	.22017	445.721	N/A	Subpart LLL	N/A
12(i) – #4 Finish Grind Operations	S2.099 – S2.101	.22017	445.721	N/A	Subpart LLL	N/A
13 – Cement Storage Silo	S2.102	.22017	445.721	N/A	Subpart LLL	N/A
14 – Cement Bulk Loading	S2.103 – S2.110	.22017	445.721	N/A	Subpart LLL	N/A
15(a) – Cement Bulk Loading - 1	S2.111 – S2.112	.22017	445.721	N/A	Subpart LLL	N/A
15(b) – Cement Bulk Loading - 4	S2.113	.22017	445.721	N/A	Subpart LLL	N/A
16(a) – Cement Bulk Loading - 2	S2.114	.22017	445.721	N/A	Subpart LLL	N/A
16(b) – Cement Bulk Loading – 3	S2.115	.22017	445.721	N/A	Subpart LLL	N/A
16(c) – Cement Bulk Loading - 5	S2.116	.22017	445.721	N/A	Subpart LLL	N/A
17(a) – Silo 16 Fill	S2.117 – S2.118	.22017	445.721	N/A	Subpart LLL	N/A
17(b) – Silo 16 Loadout Spout	S2.119	.22017	445.721	N/A	Subpart LLL	N/A
18 – Packhouse	S2.120 – S2.122	.22017	445.721	N/A	Subpart LLL	N/A
19(a) - Rail Unloading/Transfer	S2.123	.22017	445.721	N/A	Subpart LLL	N/A
19(b) - Rail Unloading/Transfer	S2.124 – S2.125	.22017	445.721	N/A	Subpart LLL	N/A
20 - Fly Ash Bulk Loading	S2.126	.22017	445.721	N/A	Subpart LLL	N/A
21(a) - Coal/Coke Handling (Rail Unloading)	PF1.026	.22017	445.721	Subpart Y	N/A	N/A
21(b) - Coal/Coke Handling (Covered Conveyors)	PF1.027 – PF1.029	.22017	445.721	Subpart Y	N/A	N/A
21(c) - Coal/Coke Handling (Coal/Coke Storage Building)	PF1.030 – PF1.031	.22017	445.721	Subpart Y	N/A	N/A
21(d) - Coal/Coke Handling (Coal/Coke Storage Building)	PF1.032 – PF1.033	.22017	445.721	Subpart Y	N/A	N/A
21(e) - Coal/Coke Handling	S2.127	.22017	445.721	Subpart Y	N/A	N/A
21(f) - Coal/Coke Handling	S2.128	.22017	445.721	Subpart Y	N/A	N/A
21(g) - Coal/Coke Handling	S2.129	.22017	445.721	Subpart Y	N/A	N/A
21(h) - Coal/Coke Handling	S2.130	.22017	445.721	Subpart Y	N/A	N/A
21(i) - Coal/Coke Handling	S2.131 – S2.133	.22017	445.721	Subpart Y	N/A	N/A
22(a) - Coal/Coke Grinding & Storage	S2.134 – S2.135	.22017	445.721	Subpart Y	N/A	N/A
22(b) - Coal/Coke Grinding & Storage	S2.136	.22017	445.721	Subpart Y	N/A	N/A
22(c) - Coal/Coke Grinding & Storage	S2.137	.22017	445.721	Subpart Y	N/A	N/A
23(a) – Synthetic Gypsum Bin Storage Tank and Handling (Storage Tank)	S2.138	.22017	445.721	N/A	Subpart LLL	N/A
23(b) – Synthetic Gypsum Bin Storage Tank and Handling (Handling Conveyors)	PF1.034 - PF1.035	.22017	445.721	N/A	Subpart LLL	N/A



### **3.2.1 NEVADA REVISED STATUTES**

The Nevada Revised Statutes (NRS) is the statutory authority for the adoption and implementation of administrative regulations. The statutes relating to the control of air pollution are contained in NRS 445B.100 through 445B.640. The NRS specifies that the State Environmental Commission is the governing body given the power to adopt administrative regulations. Because the NRS is the enabling statutory authority, very few specific requirements are contained in the statutes. Rather, the NRS provides, generally, broad authority for the adoption and implementation of air pollution control regulations.

### **3.2.2 NEVADA ADMINISTRATIVE CODE**

The Nevada Administrative Code (NAC) is the administrative regulations that contain specific requirements relating to the control of air pollution. The State Environmental Commission adopts these regulations. The NAC requires that, where state regulations are more stringent in comparison to Federal regulations, the State regulations are applicable. The NAC sets forth, by rule, maximum emission standards for visible emissions (opacity), PM<sub>10</sub> and sulfur emitting processes. Other requirements are established for incinerators, storage tanks, odors and maximum concentrations of regulated air pollutants in the ambient air. Other NAC regulations specify the requirements for applying for and method of processing applications for operating permits.

All of the equipment considered in this application must meet, at a minimum, the applicable standards and requirements set forth in the NAC. Specifically, the emission standards contained in NAC 445B.22017 for opacity, and 445B.22097 for the ambient air quality standards must not be exceeded.

### **3.2.3 NEVADA APPLICABLE SIP (ASIP)**

The Applicable State Implementation Plan (ASIP) is a document prepared by a State or Local air regulatory agency and required to submit to the U.S. EPA for approval. The Title I of the Clean Air Act is the statutory authority for the U.S. EPA regulations that require a State to submit a SIP. The contents of the SIP are intended to show how a State, through the implementation and enforcement of the regulations contained in the SIP, will either show how attainment of the national ambient air quality standards (NAAQS) will be achieved or how a State will continue to maintain compliance with the NAAQS. Nevada's most recent ASIP approved by the U.S. EPA is based on State regulations codified in 1982 with revisions/approvals as recently as May 2007. In general, the regulations contained in the ASIP closely parallel the current NAC regulations. However, because the ASIP is partly based on older air quality regulations (at this time), compliance with all of the current NAC regulatory requirements does not necessarily ensure compliance with the ASIP requirements. All of the equipment considered in this application must meet, at a minimum, the standards set forth in the ASIP. Specifically, the emission standards contained in ASIP NAC 445B.22017 for opacity and 445B.22097 for the ambient air quality standards must not be exceeded.

### **3.2.4 CODE OF FEDERAL REGULATIONS (CFR)**

The Code of Federal Regulations (CFR) is the regulations adopted by the U.S. EPA and published in the Federal Register pursuant to the authority of the granted by Congress in the Clean Air Act. The CFR addresses multiple aspects, including but not limited to, permitting requirements, performance standards, testing methods, and monitoring requirements.

### 3.2.4.1 NEW SOURCE PERFORMANCE STANDARDS (NSPS)

The U.S. EPA has promulgated maximum emission standards and/or monitoring/recordkeeping methods for selected source categories. These standards are contained in Title 40 of the CFR, Part 60, and are known as the New Source Performance Standards (NSPS).

- **Subpart F** – Standards of Performance for Portland Cement Plants, specifies standards for particulate matter for any facility, which commences construction or modification after August 17, 1971. Emission units PF1.001, PF1.004, PF1.010, PF1.013, PF1.016, PF1.019, PF1.022, and PF1.025 are involved in “materials truck dumps to hoppers/feeders” and are not subject to the requirements of NSPS Subpart F.

Emission units S2.001 – S2.006: based on NCC’s provided equipments manufactured/purchased dates of 1964, these emission units pre-dated NSPS requirements (August 17, 1971) and are not subject to the requirements of NSPS Subpart F.

NCC is determined to be a major source for hazardous air pollutants (HAPs) [re: Attachment 1 – Emission Calculation Spreadsheets] and subject to the requirements of National Emission Standards for Hazardous Air Pollutants (NESHAPs) from the Portland Cement Manufacturing Industry, 40 CFR Part 63 Subpart LLL. Pursuant to 40 CFR Part 63 Subpart LLL § 63.1356.(a), any affected source subject to the provisions of Part 63 Subpart LLL is exempt from any otherwise applicable NSPS contained in Subpart F of 40 CFR Part 60. Therefore, NCC’s all other remaining emission units are exempted from the provisions of Subpart F.

- **Subpart OOO** – Standards of Performance for Nonmetallic Mineral Processing Plants, specifies standards for particulate matter for any facility, which commences construction, reconstruction, or modification after August 31, 1983. Emission units PF1.001, PF1.004, PF1.010, PF1.013, PF1.016, PF1.019, PF1.022, and PF1.025 are involved in “materials truck dumps to hoppers/feeders” and are not subject to the requirements of NSPS Subpart OOO.

Emission units S2.001 – S2.006: based on NCC’s provided equipments manufactured/purchased dates of 1964, these emission units pre-dated NSPS requirements (August 31, 1983) and are not subject to the requirements of NSPS Subpart OOO.

NCC is determined to be a major source for hazardous air pollutants (HAPs) [re: Attachment 1 – Emission Calculation Spreadsheets] and subject to the requirements of National Emission Standards for Hazardous Air Pollutants (NESHAPs) from the Portland Cement Manufacturing Industry, 40 CFR Part 63 Subpart LLL. Pursuant to 40 CFR Part 63 Subpart LLL § 63.1356.(a), any affected source subject to the provisions of Part 63 Subpart LLL is exempt from any otherwise applicable NSPS contained in Subpart OOO of 40 CFR Part 60. Therefore, NCC’s all other remaining emission units are exempted from the provisions of Subpart OOO.

- **Subpart Y** - Standards of Performance for Coal Preparation Plants, specifies standards for particulate matter for any facility, which commences construction or modification after October 24, 1974. The provisions of this subpart are applicable to any of the following affected facilities in coal preparation plants which process more than 181 MG (200 tons) per day: Thermal dryers, pneumatic coal-cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems.

NCC’s Systems 21(a) through (i) are involved in coal/coke handling and storage operations; and Systems 22(a) through (c) are involved in coal/coke grinding and storage operations. NCC is determined to be a

major source for hazardous air pollutants (HAPs) [re: Attachment 1 – Emission Calculation Spreadsheets].

Pursuant to Subpart LLL § 63.1340(b)(7), “Each conveying system transfer point including those associated with coal preparation used to convey coal from the mill to the kiln at any portland cement plant which is a major source” will be subject to the requirements of Subpart LLL. Systems 21(a) through 22(c) – NCC indicated that none of these systems convey coal from the mill to the kiln (re: NCC’s letter dated August 24, 2007). Pursuant to Federal Register (Vol. 67, No. 66 / Friday, April 5, 2002 / Rules and Regulations, Page 16615, Section II. Amendments to the NESHAP, A. Applicability and Designation of Affected Sources, Paragraph 5), NCC’s Systems 21(a) through 22(c) will continue to be subject to the NSPS for coal preparation plants (i.e., 40 CFR Part 60 Subpart Y) and will not be subject to 40 CFR Part 63 Subpart LLL.

- Systems 21(a) through 21(i); 22(b) and 22(c) are subject to the requirements of § 60.252(c) – Standards for particulate matter; and § 60.254(b)(2) – Test methods and procedures.
- System 22(a) – This system falls under the definition of “thermal dryer” (re: NCC’s letter dated August 24, 2007). Pursuant to §60.251(e) – Thermal dryer means any facility in which the moisture content of bituminous coal is reduced by contact with a heated gas stream which is exhausted to the atmosphere. System 22(a) is subject to the requirements of § 60.252(a)(1) & (2) – Standards for particulate matter; § 60.253(a) & (b) – Monitoring of operations; and § 60.254(a) & (b) – Test methods and procedures.

### **3.2.4.2 NATIONAL EMISSION STANDARDS for HAZARDOUS AIR POLLUTANTS (NESHAPs)**

The U.S. EPA has promulgated maximum emission standards and/or monitoring/recordkeeping methods for selected source categories. These standards are contained in Title 40 of the CFR, Parts 61 and 63, and are known as the National Emission Standards for Hazardous Air Pollutants (NESHAPs).

- **Part 63, Subpart LLL** – National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry, specifies standards for some specific emissions for each new and existing portland cement plant which is a major source or an area source as defined in § 63.2.

Major source means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence (40 CFR Part 63 § 63.2).

Area source means any stationary source of hazardous air pollutants that is not a major source as defined above (40 CFR Part 63 § 63.2).

NCC’s estimated facility-wide HAPs emissions are **95.37** tons/year and greater than the threshold limits of 25 tons/year for combined HAPs. NCC’s HAPs emissions were calculated based on AP-42 emission factors [Tables 11.6-8 and 11.6-9 (Rev. 1/95); and Tables 1.4-3 and 1.4-4 (Rev. 7/98)]. The NCC facility is determined to be a major source of hazardous air pollutants (HAPs) as a result of the proposed OPTC permit application.

**Table 3.2.4.2.a. - Summary of NCC's Proposed (Facility-wide) HAPs Emissions**

System(s) / Description(s)	Emission Unit(s)	Pollutant(s)						
		Beryllium (Be)	Benzene	Hydrogen Chloride	Lead (Pb)	Mercury (Hg)	All other HAPs	Total HAPs
		ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	tons/yr
07 – Kiln System	S2.040 – S2.043	0.0004	9.46	82.78	0.0443	0.0142	1.809	94.11
09 – #1 Finish Mill Systems	S2.051 – S2.058	0.0000	---	---	0.0000	0.0000	0.0567	0.06
10 – #2 Finish Mill Systems	S2.059 – S2.065	0.0000	---	---	0.0000	0.0000	0.0567	0.06
Insignificant Activities**	IA1.001 – IA1.009	---	---	---	---	---	---	1.14
<b>Total Facility-wide HAPs Emissions:</b>		0.0004	9.46	82.78	0.0443	0.0142	3.0624	<b>95.37</b>

\*\* Insignificant activities include HAPs emissions from six fuel oil storage tanks, one portable generator, and one pony motor. NCC has concluded that there are no HAPs emissions from the cooling tower.

The NCC facility is determined to be a major source of hazardous air pollutants (HAPs) as a result of the OPTC permit application [re: Table 3.2.4.2.a. above; and Attachment 1 – Emission Calculation Spreadsheets] and subject to the requirements of National Emission Standards for Hazardous Air Pollutants (NESHAPs) from the Portland Cement Manufacturing Industry, 40 CFR Part 63 Subpart LLL.

Emission units PF1.001, PF1.004, PF1.010, PF1.013, PF1.016, PF1.019, PF1.022, and PF1.025 are involved in “materials truck dumps to hoppers/feeders” and are not subject to the requirements of NESHAPs Part 63 Subpart LLL. Pursuant to Subpart LLL § 63.1340(c), “Any equipment of the on-site nonmetallic mineral processing plant which precedes the raw material storage is not subject to Subpart LLL. Furthermore, the first conveyor transfer point subject to this subpart is the transfer point associated with the conveyor transferring material from the raw material storage to the raw mill.”

Emission units S2.001 – S2.006 (Primary Crusher Circuit) are not subject to the requirements of NESHAPs Part 63 Subpart LLL. Pursuant to Subpart LLL § 63.1340(c), “the primary and secondary crushers of the on-site nonmetallic mineral processing plant, regardless of whether they precede the raw material storage, are not subject to Subpart LLL.”

Pursuant to Subpart LLL § 63.1340(b)(7), “Each conveying system transfer point including those associated with coal preparation used to convey coal from the mill to the kiln at any portland cement plant which is a major source” will be subject to the requirements of Subpart LLL. Systems 21(a) through 22(c) do not convey coal from the mill to the kiln (re: NCC’s letter dated August 24, 2007). Pursuant to Federal Register (Vol. 67, No. 66 / Friday, April 5, 2002 / Rules and Regulations, Page 16615, Section II. Amendments to the NESHAP, A. Applicability and Designation of Affected Sources, Paragraph 5), NCC’s Systems 21(a) through 22(c) will continue to be subject to the NSPS for coal preparation plants (i.e., 40 CFR Part 60 Subpart Y) and will not be subject to 40 CFR Part 63 Subpart LLL.

NCC's all other remaining emission units are subject to the requirements of NESHAPs Part 63 Subpart LLL as follows. The details of all the NESHAPs requirements are spelled out in the proposed permit.

- Kiln system is subject to the requirements of § 63.1343(c) – Standards for reconstructed or new kilns located at major sources; § 63.1344 – Operating limits; § 63.1349 – Performance testing; § 63.1350 – Monitoring; § 63.1353 – Notification; § 63.1354 – Reporting; and § 63.1355 – Recordkeeping.
- Clinker cooler systems are subject to the requirements of § 63.1345 – Standards; § 63.1349 – Performance testing; § 63.1350 – Monitoring; § 63.1353 – Notification; § 63.1354 – Reporting; and § 63.1355 – Recordkeeping.
- Raw and finish mill systems are subject to the requirements of § 63.1347 – Standards; § 63.1349 – Performance testing; § 63.1350 – Monitoring; § 63.1353 – Notification; § 63.1354 – Reporting; and § 63.1355 – Recordkeeping.
- All other systems (other than kilns; clinker coolers; and raw and finish mills) are subject to the requirements of § 63.1348 – Standards; § 63.1349 – Performance testing; § 63.1350 – Monitoring; § 63.1353 – Notification; § 63.1354 – Reporting; and § 63.1355 – Recordkeeping.

### **3.2.4.3 PREVENTION of SIGNIFICANT DETERIORATION (PSD) REGULATIONS**

Implementation of the federal PSD regulations is delegated to the State of Nevada by U.S. EPA and are contained at 40 CFR Part 52.21. Therefore, NDEP-BAPC implements the federal PSD regulations directly. These regulations specify federally required permitting procedures for each "major stationary source". The PSD regulations define a "stationary source" as *"any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act."* A "building structure facility or installation" is defined as *"all of the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same 'Major Group' (i.e., which have the same first two digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement."*

"Major" is defined as the potential to emit of a stationary source, which equals or exceeds a specified threshold (in tons per year) of any air pollutant regulated under the Clean Air Act (40 CFR 52.21(b)(1)). The first threshold is for a stationary source that emits or has the potential to emit 100 tons per year or more and is defined as one of 28 specific categories of sources (see 40 CFR 52.21(b)(1)(i)(a)). The other applicability threshold is for any other stationary source that emits or has the potential to emit 250 tons per year (see 40 CFR 52.21(b)(1)(i)(b)).

The SIC code for this facility is 3241. Therefore, the major SIC grouping is 32, which is identified as "Stone, Clay Glass, and Concrete Products" in the SIC manual. The NCC facility located in Fernley is categorized as a portland cement plant under the **28 category sources** within PSD applicability. Therefore, major source status is classified at the **100 tons per year** emission threshold for any pollutant regulated under the Act.

The existing facility permit defines the NCC facility as an existing major stationary source for PSD purposes, because emissions of all criteria pollutants are above the 100 tons per year threshold (refer to the

Section 4.0 of this review). The proposed OPTC permit application will not result in any increases in applicable criteria pollutant in excess of the Significant Emission Thresholds for PSD/NSR review purposes based on permittee's average actual emissions [for the period January 1, 2004 through December 31, 2005 (re: 40 CFR 52.21(b)(21)(ii))] vs. permittee's new proposed emissions (refer to the Table 4.1.c. of this review; and Attachment 1, Emission Calculation Spreadsheets). Emissions of particulate matter less than 10 µm in diameter (PM<sub>10</sub>), and nitrogen oxides (NO<sub>x</sub>) will be reduced as a result of the proposed OPTC permit. Emissions of particulate matter (PM), carbon monoxides (CO), sulfur dioxides (SO<sub>2</sub>), and volatile organic compounds (VOCs) will increase, but will not exceed their respective PSD significance thresholds. The permittee's proposed OPTC permit application will not result in any increases in excess of the applicable pollutant Significant Emission Thresholds [re: 40 CFR 52.21(b)(23)(i)] for PSD/NSR review purposes. Therefore, permittee's OPTC permit application is minor for PSD and will not be required to undergo any further PSD/NSR review at this time.

#### **3.2.4.4 COMPLIANCE ASSURANCE MONITORING (CAM)**

The U.S. EPA has promulgated requirements for sources to provide detailed monitoring plans that will ensure compliance with all applicable requirements. These monitoring requirements are contained in 40 CFR Part 64. Section 64.2 Applicability, specifies that these monitoring requirements apply to a "pollutant-specific emissions unit at a major source" if all of the following are satisfied:

- The unit is subject to an emission limitation or standard;
- The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- The unit has potential pre-control device (uncontrolled) emissions equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

The key factors that would require the submission of a CAM plan are: 1) the facility must be defined as a "major source"; and 2) the units must be subject to an emission limitation or standard (acid rain limitations and standards are not included). The existing facility permit defines the NCC facility as an existing major stationary source because emissions of all criteria pollutants are above the 100 tons per year threshold (refer to the Section 4.0 of this review).

The permittee's OPTC permit application will not result in any significant increases in permittee's existing permitted emission limits [refer to the Table 4.1.b. - Summary of NCC's Proposed vs. Existing Annual Emissions (Total Facility-wide)]. Also, the permittee's OPTC permit application will not result in any increases in applicable pollutant Significant Emission Thresholds for PSD/NSR review purposes [refer to the Table 4.1.c. - Summary of NCC's Average Actual vs. New Proposed Annual Emissions]. Moreover, NCC's proposed OPTC permit modification application is a state operating permit requirement. NDEP-BAPC has determined that permittee's OPTC permit application does not require a CAM plan at this time. A CAM plan will need to be submitted when the OPTC transitions to a Class I Operating Permit, subject to the Title V requirements.

## 4.0 EMISSIONS INVENTORY

### 4.1 EMISSIONS

See Table 4.1.a. for a summary of the facility's proposed annual emission limits.

**TABLE 4.1.a. – Summary of NCC's Proposed (Facility-wide) Annual Emissions**

System(s) / Description(s)	Emission Unit(s)	PM-10 (ton/yr)	PM (ton/yr)	NO <sub>x</sub> (ton/yr)	CO (ton/yr)	SO <sub>2</sub> (ton/yr)	VOC (ton/yr)
01 - Limestone Truck Dump	PF1.001	0.45	0.96	---	---	---	---
02 - Primary Crusher Circuit	S2.001 – S2.006	6.60	6.60	---	---	---	---
03(a) - Raw Material Storage	PF1.002	0.22	0.61	---	---	---	---
03(b) - Raw Material Storage	S2.007 – S2.011	2.55	2.55	---	---	---	---
03(c) - Raw Material Storage	PF1.003 – PF1.005	3.33	9.10	---	---	---	---
03(d) - Raw Material Storage	PF1.006 – PF1.007	1.92	5.26	---	---	---	---
03(e) - Raw Material Storage	PF1.008 – PF1.010	0.21	0.54	---	---	---	---
03(f) - Raw Material Storage	PF1.011 – PF1.013	0.21	0.54	---	---	---	---
03(g) - Raw Material Storage	PF1.014– PF1.016	0.042	0.146	---	---	---	---
03(h) - Raw Material Storage	PF1.017 – PF1.019	0.36	0.96	---	---	---	---
03(i) - Raw Material Storage	PF1.020 – PF1.022	0.104	0.272	---	---	---	---
03(j) - Raw Material Storage	PF1.023 – PF1.025	0.13	0.28	---	---	---	---
04(a) - Raw Mill	S2.012	1.31	1.31	---	---	---	---
04(b) - Raw Mill	S2.013 – S2.017	1.37	1.37	---	---	---	---
04(c) - Raw Mill	S2.018 – S2.019	2.55	2.55	---	---	---	---
04(d) - Raw Mill	S2.020	1.05	1.05	---	---	---	---
05(a) – Blending Operations Storage Silos	S2.021 – S2.023	1.05	1.05	---	---	---	---
05(b) – Blending Operations Storage Silos	S2.024 – S2.027	1.69	1.69	---	---	---	---
06(a) – Kiln Feed System	S2.028 – S2.032	1.37	1.37	---	---	---	---
06(b) – Kiln Feed System	S2.033 – S2.035	1.05	1.05	---	---	---	---
06(c) – Kiln Feed System	S2.036 – S2.037	1.74	1.74	---	---	---	---
06(d) – Kiln Feed System	S2.038 – S2.039	1.05	1.05	---	---	---	---
07 – Kiln System	S2.040 – S2.043	34.82	34.82	2,365.20	218.80	189.20	59.10
08(a) – Clinker Cooler System	S2.044	29.89	29.89	---	---	---	---
08(b) – Clinker Handling System	S2.045 – S2.047	1.42	1.42	---	---	---	---
08(c) – Clinker Conveyors	S2.048 – S2.050	1.08	1.08	---	---	---	---
09 – #1 Finish Mill Systems	S2.051 – S2.058	2.73	2.73	3.01	2.52	0.02	0.17
10 – #2 Finish Mill Systems	S2.059 – S2.065	5.32	5.32	3.01	2.52	0.02	0.17
11 – #3 Finish Mill Systems	S2.066 – S2.071	5.32	5.32	---	---	---	---
12(a) – #4 Finish Grind Operations	S2.072	1.72	1.72	---	---	---	---
12(b) – #4 Finish Grind Operations	S2.073 – S2.074	1.08	1.08	---	---	---	---
12(c) – #4 Finish Grind Operations	S2.075 – S2.080	4.52	4.52	---	---	---	---
12(d) – #4 Finish Grind Operations	S2.081 – S2.085	2.71	2.71	---	---	---	---
12(e) – #4 Finish Grind Operations	S2.086	24.77	24.77	---	---	---	---
12(f) – #4 Finish Grind Operations	S2.087 – S2.091	1.46	1.46	---	---	---	---
12(g) – #4 Finish Grind Operations	S2.092 – S2.093	3.06	3.06	---	---	---	---
12(h) – #4 Finish Grind Operations	S2.094 – S2.098	1.46	1.46	---	---	---	---
12(i) – #4 Finish Grind Operations	S2.099 – S2.101	1.12	1.12	---	---	---	---

**TABLE 4.1.a. – Summary of NCC’s Proposed (Facility-wide) Annual Emissions (continued)**

<b>System(s) / Description(s)</b>	<b>Emission Unit(s)</b>	<b>PM-10 (ton/yr)</b>	<b>PM (ton/yr)</b>	<b>NOx (ton/yr)</b>	<b>CO (ton/yr)</b>	<b>SO2 (ton/yr)</b>	<b>VOC (ton/yr)</b>
13 – Cement Storage Silo	S2.102	1.07	1.07	---	---	---	---
14 – Cement Bulk Loading	S2.103 – S2.110	3.71	3.71	---	---	---	---
15(a) – Cement Bulk Loading - 1	S2.111 – S2.112	0.91	0.91	---	---	---	---
15(b) – Cement Bulk Loading - 4	S2.113	0.45	0.45	---	---	---	---
16(a) – Cement Bulk Loading - 2	S2.114	0.91	0.91	---	---	---	---
16(b) – Cement Bulk Loading – 3	S2.115	0.91	0.91	---	---	---	---
16(c) – Cement Bulk Loading - 5	S2.116	0.45	0.45	---	---	---	---
17(a) – Silo 16 Fill	S2.117 – S2.118	0.65	0.65	---	---	---	---
17(b) – Silo 16 Loadout Spout	S2.119	0.43	0.43	---	---	---	---
18 – Packhouse	S2.120 – S2.122	1.50	1.50	---	---	---	---
19(a) - Rail Unloading/Transfer	S2.123	0.30	0.30	---	---	---	---
19(b) - Rail Unloading/Transfer	S2.124 – S2.125	0.60	0.60	---	---	---	---
20 - Fly Ash Bulk Loading	S2.126	1.13	1.13	---	---	---	---
21(a) - Coal/Coke Handling (Rail Unloading)	PF1.026	0.15	0.32	---	---	---	---
21(b) - Coal/Coke Handling (Covered Conveyors)	PF1.027 – PF1.029	0.45	0.96	---	---	---	---
21(c) - Coal/Coke Handling (Coal/Coke Storage Building)	PF1.030 – PF1.031	0.15	0.32	---	---	---	---
21(d) - Coal/Coke Handling (Coal/Coke Storage Building)	PF1.032 – PF1.033	0.015	0.032	---	---	---	---
21(e) - Coal/Coke Handling	S2.127	1.31	1.31	---	---	---	---
21(f) - Coal/Coke Handling	S2.128	1.31	1.31	---	---	---	---
21(g) - Coal/Coke Handling	S2.129	1.31	1.31	---	---	---	---
21(h) - Coal/Coke Handling	S2.130	1.31	1.31	---	---	---	---
21(i) - Coal/Coke Handling	S2.131 – S2.133	1.31	1.31	---	---	---	---
22(a) - Coal/Coke Grinding & Storage	S2.134 – S2.135	4.45	4.45	---	---	---	---
22(b) - Coal/Coke Grinding & Storage	S2.136	0.65	0.65	---	---	---	---
22(c) - Coal/Coke Grinding & Storage	S2.137	0.65	0.65	---	---	---	---
23(a) – Synthetic Gypsum Bin Storage Tank and Handling (Storage Tank)	S2.138	2.09	2.09	---	---	---	---
23(b) – Synthetic Gypsum Bin Storage Tank and Handling (Handling Conveyors)	PF1.034 - PF1.035	0.17	0.50	---	---	---	---
Insignificant Activities including facility’s Fugitive Emissions**	IA1.001 – IA1.009	3.59	11.89	3.10	0.66	0.26	1.14
<b>Total Facility-wide Proposed Annual Emissions:</b>		<b>184.77</b>	<b>205.95</b>	<b>2,374.31</b>	<b>224.51</b>	<b>189.50</b>	<b>60.57</b>

\*\* Insignificant activities include emissions from six fuel oil storage tanks; one portable generator; one pony motor; and a cooling tower. Fugitive dust emissions include emissions from storage piles; unpaved haul roads; paved haul roads; and wind erosions of CKD (cement kiln dust) areas. Fugitive dust emissions from locomotives (rail cars) are not considered at this time.



**Table 4.1.b. - Summary of NCC's Existing Permitted vs. Proposed OPTC (Facility-wide) Annual Emissions**

Pollutant / Source(s)	PM <sub>10</sub> (tons/yr)	PM (tons/yr)	NO <sub>x</sub> (tons/yr)	CO (tons/yr)	SO <sub>2</sub> (tons/yr)	VOC (tons/yr)	HAPs (tons/yr)
<b>Existing Permitted Emissions (PTE)</b>	352.06	365.18	4,187.03	336.06	376.09	146.55	18.27
<b>Proposed OPTC Emissions (PTE)</b>	184.77	205.95	2,374.31	224.51	189.50	60.57	95.37
<b>Net Emissions Changes</b>	<b>(167.29)</b>	<b>(159.23)</b>	<b>(1,812.72)</b>	<b>(111.55)</b>	<b>(186.59)</b>	<b>(85.98)</b>	<b>77.10</b>

**Table 4.1.c. - Summary of NCC's Baseline Actual vs. Proposed OPTC (Facility-wide) Annual Emissions**

Pollutant / Source(s)	PM <sub>10</sub> (tons/yr)	PM (tons/yr)	NO <sub>x</sub> (tons/yr)	CO (tons/yr)	SO <sub>2</sub> (tons/yr)	VOC (tons/yr)	HAPs (tons/yr)
<b>Baseline Actual Emissions</b> (for the period January 1, 2004 through December 31, 2005)	192.40	200.41	3,262.19	133.94	154.34	22.50	---
<b>Proposed OPTC Emissions (PTE)</b>	184.77	205.95	2,374.31	224.51	189.50	60.57	95.37
<b>Net Emissions Changes</b>	<b>(7.63)</b>	<b>5.54</b>	<b>(887.88)</b>	<b>90.57</b>	<b>35.16</b>	<b>38.07</b>	N/A
<b>PSD Significant Thresholds</b>	<b>15</b>	<b>25</b>	<b>40</b>	<b>100</b>	<b>40</b>	<b>40</b>	N/A

**Table 4.1.c. - Summary of NCC's Baseline Actual vs. Proposed OPTC (Facility-wide) Annual Emissions  
(continued)**

Pollutant / Source(s)	Lead (tons/yr)	Flourides (tons/yr)	H <sub>2</sub> SO <sub>4</sub> Mist (tons/yr)	H <sub>2</sub> S (tons/yr)	Total Reduced Sulfur (tons/yr)	Reduced Sulfur Compounds (tons/yr)
<b>Baseline Actual Emissions</b> (for the period January 1, 2004 through December 31, 2005)	0.019	0.22	---	---	---	---
<b>Proposed OPTC Emissions (PTE)</b>	0.044	0.53	---	---	---	---
<b>Net Emissions Changes</b>	<b>0.026</b>	<b>0.31</b>	---	---	---	---
<b>PSD Significant Thresholds</b>	<b>0.6</b>	<b>3</b>	<b>7</b>	<b>10</b>	<b>10</b>	<b>10</b>

OPTC permit application: Refer to the above Tables 4.1.b. and 4.1.c.; the OPTC application will not result in any significant increases in permittee's existing permitted emission limits. Also, the permittee's OPTC application will not result in any increases in excess of the applicable pollutant Significant Emission Thresholds for PSD/NSR review purposes.

## **5.0 PREVENTION OF SIGNIFICANT DETERIORATION (PSD) DETERMINATION**

As discussed in Section 3.2.4.3 above, 40 CFR Part 52.21 specifies that Prevention of Significant Deterioration (PSD) review is required for any new major stationary source or any major modification. A major source is defined as any pollutant emitting activities, which belong to the same two digit Source Industry Classification (SIC), and:

1. emits 100 tons/year or more of a regulated air contaminate as one of the listed categories of sources listed in 40 CFR 52.21; or
2. emits 250 tons/year or more of a regulated air contaminant and belong to any other category sources.

The NCC facility located in Fernley is categorized as a portland cement plant under the **28 category sources** within PSD applicability. Therefore, major source status is classified at the **100 tons per year** emission threshold for any pollutant regulated under the Act. The existing facility permits define the NCC facility as an existing major stationary source because emissions of all criteria pollutants are above the 100 tons per year threshold (refer to the Table 4.1.b. of this review).

The NCC facility is located on contiguous property, and is owned and operated by persons under common

control. The same industrial grouping means, any emission unit with the same major group classification as described in the Standard Industrial Classification (SIC). As stated previously, the NCC facility is classified under only one major source group, Group-32 (Stone, Clay Glass, and Concrete Products).

The permittee's proposed OPTC permit modification will not result in any increases in excess of the applicable pollutant Significant Emission Thresholds for PSD/NSR review purposes (refer to the Table 4.1.c. of this review). Therefore, permittee's OPTC permit application is minor for PSD and will not be required to undergo any further PSD/NSR review at this time.

## 6.0 AMBIENT AIR QUALITY IMPACT

The purpose of the air quality analysis is to demonstrate that the emissions from the stationary source will not cause or contribute to a violation of any applicable federal or state ambient air quality standards prior to the issuance of an operating permit.

NCC performed a dispersion modeling analysis using the air quality model, AERMOD (American Meteorological Society/EPA Regulatory Model, Version 07026) model to assess the ambient air quality impacts of PM<sub>10</sub>, NO<sub>x</sub>, CO, SO<sub>2</sub>, VOCs (ozone), and lead (Pb). Proposed permitted source parameters and emission rates were modeled for comparison with Nevada ambient air quality standards. NCC indicated that AERMOD code compiled with the Intel Fortran compiler (Version 9.1) produces executable code that runs approximately twice as fast on NCC's consultant's Xeon processor-based machines than the EPA-compiled code available on the SCRAM web page. To finish all model runs in a reasonable amount of time (less than one week), NCC modified the EPA-compiled code and model runs were made using Intel-compiled code.

NCC indicated that two sets of code modifications were made (re: Attachment 3 - copy of NCC's letter dated November 9, 2007). Modifications were made only to WRITE and FORMAT statements, not to any model computations.

1. A minor change was made to a FORMAT statement to eliminate improper form-feeds in the output files produced by Version 07026; and
2. Minor modifications were made to one WRITE and one FORMAT statement to enable output of source group contributions using the MAXIFILE option.

These changes were made simply to enhance post-processing of the results. The following table lists the AERMOD modules that were modified by NCC.

Code Change	Model Source File Name	Subroutine Name
Eliminate improper form-feeds in model output file	AERMOD.FOR	HEADER
Print source group contributions to MAXIFILE	CALC2.FOR	MAXFIL
	SETUP.FOR	VARINI

NCC compiled AERMOD-ready surface and profile data files for 1998 through 2001 at the Sierra Pacific

Power Company Tracy Generating Station located approximately 23 km west-southwest of Fernley. Additional National Weather Service surface and upper air data collected at Reno was also included. NCC applied a 45 degree clockwise rotation (i.e., WDROTATE keyword) to the modeled meteorological dataset with respect to the Tracy Generating Station wind rose. NCC indicated that rotated Tracy winds data was used based on technical grounds and to align the data with local observations. This resulted in more conservative modeled impacts (re: NCC's letter dated November 9, 2007). NCC also conducted test model runs in late May 2006 using both rotated and un-rotated Tracy winds data. Tests were conducted only for short-term PM<sub>10</sub> impacts. The results of those tests showed that High-first-high modeled PM<sub>10</sub> impacts using rotated Tracy winds were about 9% higher than impacts using un-rotated Tracy winds (re: NCC's letter dated November 9, 2007).

NDEP-BAPC used the EPA regulatory version of AERMOD (Version 5.6.0) to verify NCC's impact results based on Intel-compiled code. No substantial difference of impacts was noted. NDEP-BAPC compared regulatory model versus NCC's recompiled model results. Additionally, NDEP-BAPC ran the unrotated Tracy meteorological data to compare impacts with NCC's model. Based on NCC's model and NDEP-BAPC's confirmatory models, the proposed OPTC impacts do not exceed the National Ambient Air Quality Standards.

NCC did not include fugitive emissions (e.g., roads, vehicles, vehicle traffic, wind erosion from storage piles or exposed ground, mobile sources, etc.) for modeling analysis to assess the ambient air quality impacts. Background concentrations of PM<sub>10</sub> and VOCs are included in reference to State of Nevada's 1990 – 2001 Trend Report. The following table compares the modeling results including background concentrations with Nevada ambient air quality standards.

**Table 6.0.a. – Modeling Results vs. Nevada Ambient Air Quality Standards**

Pollutant(s)	Averaging Period(s)	Modelled Predicted Concentrations <sup>1</sup> (µg/m <sup>3</sup> )	Background Concentrations <sup>2</sup> (µg/m <sup>3</sup> )	Total Concentrations (µg/m <sup>3</sup> )	Nevada Ambient Air Quality Standards (µg/m <sup>3</sup> )
PM <sub>10</sub>	24-hr	0.61	56.75	57.36	150
	Annual	0.37	17.75	18.12	50
NOx	Annual	0.82	---	0.82	100
CO	1-hour	72.11	---	72.11	40,000
	8-hour	12.57	---	12.57	10,000
SO <sub>2</sub>	3-hour	4.16	---	4.16	1,300
	24-hour	0.70	---	0.70	365
	Annual	0.05	---	0.05	80
VOCs	1-hour	30.66	156.67	187.33	235
Lead	Quarterly	0.00068	---	0.00068	1.5

<sup>1</sup> NCC's Ambient Air Quality Impact Analysis received on July 06, 2007, Tables 5-4 and 5-5.

<sup>2</sup> State of Nevada, Bureau of Air Quality Planning, 1990 – 2001 Trend Report.

NCC's proposed OPTC permit application will not result in any significant increases in permittee's existing permitted emission limits (re: Table 4.1.b. of this review). Also, NCC's OPTC application will not result in any increases in excess of the applicable pollutant Significant Emission Thresholds for PSD/NSR review purposes (re: Table 4.1.c. of this review). Based on the information provided in the facility's application materials and NDEP-BAPC's review, NCC will not exceed the National Ambient Air Quality Standards.

This facility is located within Hydrographic Basin 76. The basin is currently designated as non-attainment for TSP (total suspended particulates) and unclassifiable/attainment for all other regulated air pollutants. Although the Basin 76 is classified as non-attainment for TSP, there is no ambient air quality standard for TSP. The unclassifiable/attainment designation has been developed due to lack of monitoring data available to properly classify an air basin, such as Basin 76. The minor source baseline date for SO<sub>2</sub> was triggered in October 26, 1982.

## **7.0 CONCLUSIONS / RECOMMENDATIONS**

Based on the information provided in NCC's OPTC permit application submittals and the determinations made in this review, permittee (Nevada Cement Company)'s request for the Proposed OPTC Permit will not violate any applicable requirements. As a result, NDEP-BAPC recommends issuance of this Class I Air Quality Operating Permit to Construct # AP3241-2201 with appropriate conditions.

### Attachments:

- (1) Emission Calculation Spreadsheets [dated November 20, 2007].
- (2) Proposed Air Quality Operating Permit to Construct # AP3241-2201.
- (3) Copy of NCC's letter dated November 9, 2007.

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Tobarak Ullah, P.E.  
Staff Engineer

Date

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Matthew A. DeBurle, P.E.  
Supervisor, Class I Permitting Branch

Date

# **Attachment 1**

## **Emission Calculation Spreadsheets**

[dated November 20, 2007]

# **Attachment 2**

**Proposed Air Quality Operating Permit to Construct**  
[# AP3241-2201]

# **Attachment 3**

Copy of NCC's letter dated November 9, 2007